Linking Study Report: Predicting Performance on the NSCAS General Summative Assessments based on NWEA MAP Growth Scores

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NWEA Psychometric Solutions

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Executive Summary

To predict student achievement on the Nebraska Student-Centered Assessment System (NSCAS) General Summative assessments in Grades 3–8 in English Language Arts (ELA) and Mathematics, NWEA® conducted a linking study using Spring 2019 data to derive Rasch Unit (RIT) cut scores on the MAP® Growth™ assessments that correspond to the NSCAS achievement levels.[1] With this information, educators can identify students at risk of failing to meet state proficiency standards early in the year and provide tailored educational interventions. The linking study has been updated since the previous version published in December 2018 to incorporate the new 2020 NWEA MAP Growth norms (Thum & Kuhfeld, 2020).

Table E.1 presents the NSCAS *On Track* achievement level cut scores and the corresponding MAP Growth RIT cut scores that allow teachers to identify students who are on track for proficiency on the state summative test and those who are not. For example, the *On Track* cut score on the NSCAS Grade 3 ELA test is 2477. A Grade 3 student with a MAP Growth Reading RIT score of 190 in the fall is likely to meet proficiency on the NSCAS ELA test in the spring, whereas a Grade 3 student with a MAP Growth Reading RIT score lower than 190 in the fall is in jeopardy of not meeting proficiency. MAP Growth cut scores for Grade 2 are also provided so educators can track early learners' progress toward proficiency on the NSCAS test by Grade 3. These cut scores were derived based on the Grade 3 cuts and the 2020 NWEA growth norms for the adjacent grade (i.e., Grades 2 to 3).

Table E.1. MAP Growth Cut Scores for NSCAS Proficiency

Assessment		*On Track* Cut Scores						
		2	3	4	5	6	7	8
ELA/Reading								
NSCAS Spring		–	2477	2500	2531	2543	2556	2561
MAP Growth	Fall	176	190	198	209	214	218	221
	Winter	185	197	204	213	218	221	223
	Spring	189	200	206	215	219	222	224
Mathematics								
NSCAS Spring		–	1190	1222	1236	1244	1247	1264
MAP Growth	Fall	179	192	203	212	218	225	232
	Winter	188	199	210	218	223	229	235
	Spring	193	204	214	222	226	232	237

Please note that the results in this report may differ from those found in the NWEA reporting system for individual districts. The typical growth scores from fall to spring or winter to spring used in this report are based on the default instructional weeks most commonly encountered for each term (i.e., Weeks 4, 20, and 32 for fall, winter, and spring, respectively). However, instructional weeks often vary by district, so the cut scores in this report may differ slightly from the MAP Growth score reports that reflect the specific instructional weeks set by partners.

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[1] The linking study will be updated to include Science once the new NSCAS Science test aligned to the Nebraska College and Career Ready Standards for Science is available.

E.1. Assessment Overview

The NSCAS General Summative Grades 3–8 ELA and Mathematics tests are Nebraska's state summative assessments aligned to the Nebraska College and Career Ready Standards. Based on their test scores, students are placed into one of three achievement levels: *Developing*, *On Track*, and *College and Career Ready (CCR) Benchmark*. These tests are used to provide evidence of student achievement in ELA and Mathematics for various test score uses such as meeting the requirements of the state's accountability program. The *On Track* cut score demarks the minimum level of achievement considered to be proficient. MAP Growth tests are adaptive interim assessments aligned to state-specific content standards and administered in the fall, winter, and spring. Scores are reported on the RIT vertical scale with a range of 100–350.

E.2. Linking Methods

Based on scores from the Spring 2019 test administration, the equipercentile linking method was used to identify the spring MAP Growth scores that correspond to the spring NSCAS achievement level cut scores. Spring cuts for Grade 2 were derived based on the cuts for Grade 3 and the 2020 NWEA growth norms. MAP Growth fall and winter cut scores that predict proficiency on the spring NSCAS test were then projected using the 2020 NWEA growth norms that provide expected score gains across test administrations.

E.3. Student Sample

Only students who took both the MAP Growth and NSCAS assessments in Spring 2019 were included in the study sample. Table E.2 presents the weighted number of Nebraska students from 186 districts and 588 schools who were included in the linking study. Since not all students in Nebraska took MAP Growth, the sample may not represent the general student population as well as it should. To ensure that the linking study sample represents the state student population in terms of race, sex, and achievement level, weighting (i.e., a statistical method that matches the distributions of the variables of interest to those of the target population) was applied to the sample. As a result, the RIT cuts derived from the study sample can be generalized to any student from the target population. All analyses in this study for Grades 3–8 were conducted based on the weighted sample.

Table E.2. Linking Study Sample

Grade	#Students	
	ELA/Reading	Mathematics
3	15,096	15,062
4	15,228	15,077
5	15,137	15,215
6	14,167	14,288
7	14,771	14,108
8	14,223	13,829

E.4. Test Score Relationships

Correlations between MAP Growth RIT scores and NSCAS scores range from 0.84 to 0.89 across both content areas, as shown in Figure E.1. These values indicate a strong relationship among the scores, which is important validity evidence for the claim that MAP Growth scores are good predictors of performance on the NSCAS assessments.

Figure E.1. Correlations between MAP Growth and NSCAS Test Scores
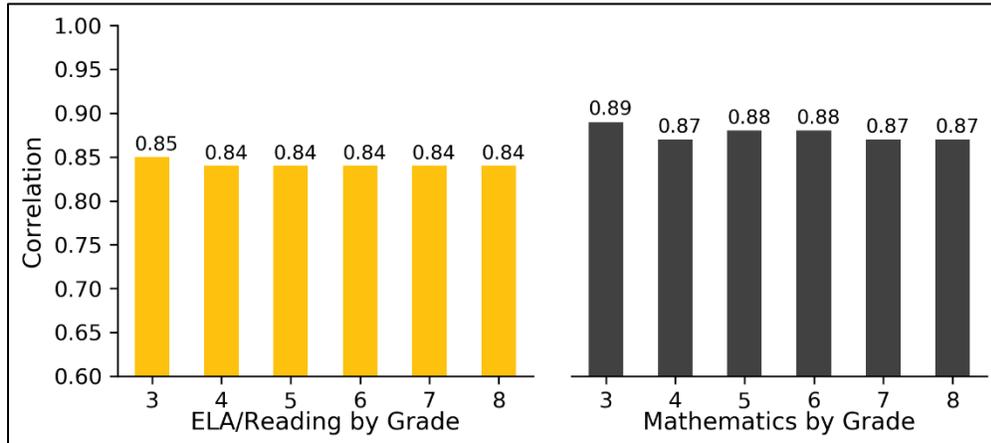
E.5. Accuracy of MAP Growth Classifications

Figure E.2 presents the classification accuracy statistics that show the proportion of students correctly classified by their RIT scores as proficient or not proficient on the NSCAS tests. For example, the MAP Growth Reading Grade 3 *On Track* cut score has a 0.85 accuracy rate, meaning it accurately classified student achievement on the state test for 85% of the sample. The results range from 0.81 to 0.88 across both content areas, indicating that RIT scores have a high accuracy rate of identifying student proficiency on the NSCAS tests.

Figure E.2. Accuracy of MAP Growth Classifications
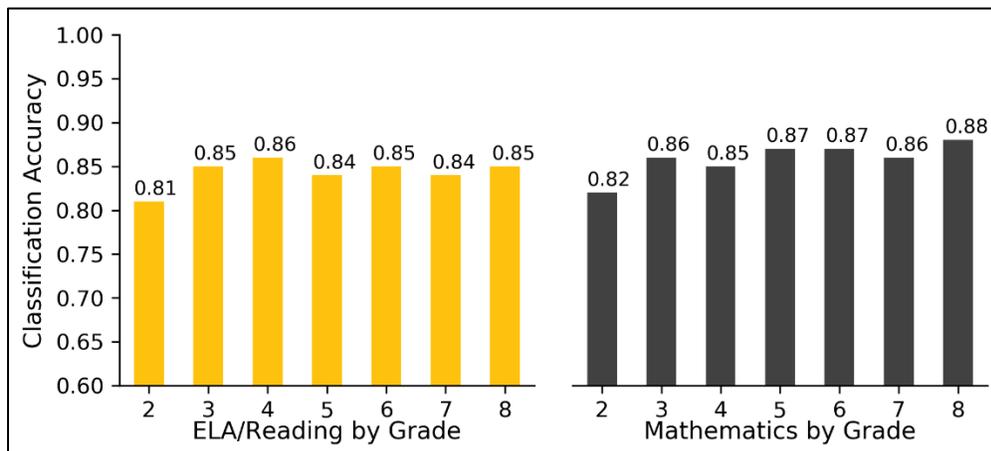
1. Introduction

1.1. Purpose of the Study

NWEA® is committed to providing partners with useful tools to help make inferences about student learning from MAP® Growth™ test scores. One important use of MAP Growth results is to predict a student's performance on the state summative assessment at different times throughout the year. This allows educators and parents to determine if a student is on track in their learning to meet state standards by the end of the year or, given a student's learning profile, is on track to obtain rigorous, realistic growth in their content knowledge and skills.

This document presents results from a linking study conducted by NWEA in September 2020 to statistically connect the scores of the Nebraska Student-Centered Assessment System (NSCAS) General Summative Grades 3–8 English Language Arts (ELA) and Mathematics assessments with Rasch Unit (RIT) scores from the MAP Growth assessments taken during the Spring 2019 term. The linking study has been updated since the previous version published in December 2018 to incorporate the new 2020 NWEA MAP Growth norms (Thum & Kuhfeld, 2020). In this updated study, MAP Growth cut scores are also included for Grade 2 so educators can track early learners' progress toward proficiency on the NSCAS test by Grade 3. This report presents the following results:

1. Student sample demographics
2. Descriptive statistics of test scores
3. MAP Growth cut scores that correspond to the NSCAS achievement levels using the equipercentile linking procedure for the spring results and the 2020 norms for the fall and winter results
4. Classification accuracy statistics to determine the degree to which MAP Growth accurately predicts student proficiency status on the NSCAS tests
5. The probability of achieving grade-level proficiency on the NSCAS assessment based on MAP Growth RIT scores from fall, winter, and spring using the 2020 norms

1.2. Assessment Overview

The NSCAS Grades 3–8 ELA and Mathematics summative assessments are aligned to the Nebraska College and Career Ready Standards. Each assessment has two cut scores (i.e., the minimum score a student must get on a test to be placed in a certain achievement level) that distinguish between the following achievement levels: *Developing*, *On Track*, and *College and Career Ready (CCR) Benchmark*. The *On Track* cut score demarks the minimum level of performance considered to be proficient for accountability purposes.

MAP Growth interim assessments from NWEA are computer adaptive and aligned to state-specific content standards. Scores are reported on the RIT vertical scale with a range of 100–350. Each content area has its own scale. To aid the interpretation of scores, NWEA periodically conducts norming studies of student and school performance on MAP Growth. Achievement status norms show how well a student performed on the MAP Growth test compared to students in the norming group by associating the student's performance on the MAP Growth test, expressed as a RIT score, with a percentile ranking. Growth norms provide expected score gains across test administrations (e.g., the relative evaluation of a student's growth from fall to spring). The most recent norms study was conducted in 2020 (Thum & Kuhfeld, 2020).

2. Methods

2.1. Data Collection

This linking study is based on data from the Spring 2019 administrations of the MAP Growth and NSCAS assessments. Each student's state testing record was matched to their MAP Growth score by using the student's first and last names, date of birth, student ID, and other available identifying information. Only students who had valid scores on both the MAP Growth and NSCAS assessments in Spring 2019 were included in the study sample.

2.2. Post-Stratification Weighting

Post-stratification weights were applied to the calculations to ensure that the linking study sample represented the state population in terms of race, sex, and achievement level. These variables were selected because they are correlated with the student's academic achievement within this study and are often provided in the data for the state population. The weighted sample matches the target population as closely as possible on the key demographics and test score characteristics. Specifically, a raking procedure was used to calculate the post-stratification weights and improve the representativeness of the sample. Raking uses iterative procedures to obtain weights that match sample marginal distributions to known population margins. The following steps were taken during this process:

- Calculate marginal distributions of race, sex, and achievement level for the sample and population.
- Calculate post-stratification weights with the rake function from the survey package in R (Lumley, 2019).
- Trim the weight if it is not in the range of 0.3 to 3.0.
- Apply the weights to the sample before conducting the linking study analyses.

2.3. MAP Growth Cut Scores

The equipercentile linking method (Kolen & Brennan, 2004) was used to identify the spring MAP Growth RIT scores that correspond to the spring NSCAS achievement level cut scores. Spring cuts for Grade 2 were derived based on the cuts for Grade 3 and the 2020 NWEA growth norms. RIT fall and winter cut scores that predict proficiency on the spring NSCAS test were then projected using the 2020 growth norms. Percentile ranks are also provided that show how a nationally representative sample of students in the same grade scored on MAP Growth for each administration, which is an important interpretation of RIT scores. This is useful for understanding (1) how student scores compared to peers nationwide and (2) the relative rigor of a state's achievement level designations for its summative assessment.

The MAP Growth spring cut scores for Grades 3–8 could be calculated using the equipercentile linking method because that data are directly connected to the NSCAS spring data used in the study. The equipercentile linking procedure matches scores on the two scales that have the same percentile rank (i.e., the proportion of tests at or below each score). For example, let x represent a score on Test X (e.g., NSCAS). Its equipercentile equivalent score on Test Y (e.g., MAP Growth), $e_y(x)$, can be obtained through a cumulative-distribution-based linking function defined in Equation 1:

$$e_y(x) = G^{-1}[P(x)] \tag{1}$$

where $e_y(x)$ is the equipercentile equivalent of score x on NSCAS on the scale of MAP Growth, $P(x)$ is the percentile rank of a given score on NSCAS, and G^{-1} is the inverse of the percentile rank function for MAP Growth that indicates the score on MAP Growth corresponding to a given percentile. Polynomial loglinear pre-smoothing was applied to reduce irregularities of the score distributions and equipercentile linking curve.

The MAP Growth conditional growth norms provide students' expected score gains across terms, such as growth from fall or winter to spring within the same grade or from spring of a lower grade to the spring of the adjacent higher grade. This information can be used to calculate the fall and winter cut scores for Grades 3–8 and the fall, winter, and spring cut scores for Grade 2. Equation 2 was used to determine the previous term's or grade's MAP Growth score needed to reach the spring cut score, considering the expected growth associated with the previous RIT score:

$$RIT_{PredSpring} = RIT_{previous} + g \qquad (2)$$

where:
- $RIT_{PredSpring}$ is the predicted MAP Growth spring score.
- $RIT_{previous}$ is the previous term's or grade's RIT score.
- g is the expected growth from the previous RIT (e.g., fall or winter) to the spring RIT.

To derive the spring cut scores for Grade 2, the growth score from spring of one year to the next was used (i.e., the growth score from spring Grade 2 to spring Grade 3). The calculation of fall and winter cuts for Grade 2 followed the same process as the other grades. For example, the growth score from fall to spring in Grade 2 was used to calculate the fall cuts for Grade 2.

2.4. Classification Accuracy

The degree to which MAP Growth predicts student proficiency status on the NSCAS tests can be described using classification accuracy statistics based on the MAP Growth spring RIT cut scores that show the proportion of students correctly classified by their RIT scores as proficient (*On Track or CCR Benchmark*) or not proficient (*Developing*). Table 2.1 describes the classification accuracy statistics provided in this report (Pommerich, Hanson, Harris, & Sconing, 2004). The results are based on the Spring 2019 MAP Growth and NSCAS data for *On Track* cut score.

Since Nebraska students do not begin taking the NSCAS assessment until Grade 3, longitudinal data were collected for the Grade 3 cohort in order to link the NSCAS assessment to MAP Growth for Grade 2 to calculate the classification accuracy statistics. To accomplish this, 2018–2019 NSCAS Grade 3 results were linked to MAP Growth data from Grade 3 students in 2018–2019 and Grade 2 students in 2017–2018. In this way, the data came from the same cohort of students beginning when they were in Grade 2 and continuing through Grade 3.

Table 2.1. Description of Classification Accuracy Summary Statistics

Statistic	Description*	Interpretation
Overall Classification Accuracy Rate	(TP + TN) / (total sample size)	Proportion of the study sample whose proficiency classification on the state test was correctly predicted by MAP Growth cut scores

Statistic	Description*	Interpretation
False Negative (FN) Rate	FN / (FN + TP)	Proportion of not-proficient students identified by MAP Growth in those observed as proficient on the state test
False Positive (FP) Rate	FP / (FP + TN)	Proportion of proficient students identified by MAP Growth in those observed as not proficient on the state test
Sensitivity	TP / (TP + FN)	Proportion of proficient students identified by MAP Growth in those observed as such on the state test
Specificity	TN / (TN + FP)	Proportion of not-proficient students identified by MAP Growth in those observed as such on the state test
Precision	TP / (TP + FP)	Proportion of observed proficient students on the state test in those identified as such by the MAP Growth test
Area Under the Curve (AUC)	Area under the receiver operating characteristics (ROC) curve	How well MAP Growth cut scores separate the study sample into proficiency categories that match those from the state test cut scores. An AUC at or above 0.80 is considered "good" accuracy.

*FP = false positives. FN = false negatives. TP = true positives. TN = true negatives.

2.5. Proficiency Projection

In addition to calculating the MAP Growth fall and winter cut scores, the MAP Growth conditional growth norms data were also used to calculate the probability of reaching proficiency on the NSCAS test based on a student's RIT scores from fall, winter, and spring. Equation 3 was used to calculate the probability of a student achieving *On Track* proficiency on the NSCAS test based on their fall or winter RIT score:

$$Pr(Achieving\ On\ Track\ in\ spring|\ starting\ RIT) = \Phi\left(\frac{RIT_{previous} + g - RIT_{SpringCut}}{SD}\right) \tag{3}$$

where:
- Φ is a standardized normal cumulative distribution.
- $RIT_{previous}$ is the student's RIT score in fall or winter (or in spring of Grade 2).
- g is the expected growth from the previous RIT (e.g., fall or winter) to the spring RIT.
- $RIT_{SpringCut}$ is the MAP Growth *On Track* cut score for spring. For Grade 2, this is the Grade 3 cut score for spring.
- SD is the conditional standard deviation of the expected growth, g.

Equation 4 was used to estimate the probability of a student achieving *On Track* proficiency on the NSCAS test based on their spring RIT score (RIT_{Spring}):

$$Pr(Achieving\ On\ Track\ in\ spring\ |\ spring\ RIT) = \Phi\left(\frac{RIT_{Spring} - RIT_{SpringCut}}{SE}\right) \tag{4}$$

where SE is the standard error of measurement for MAP Growth.

3. Results

3.1. Study Sample

Only students who took both the MAP Growth and NSCAS assessments in Spring 2019 were included in the study sample. Data used in this study were collected from 186 districts and 588 schools in Nebraska. Table 3.1 presents the demographic distributions of race, sex, and achievement level in the original unweighted study sample. Table 3.2 presents the distributions of the student population that took the Spring 2019 NSCAS tests (NDE, 2019). Since the unweighted data are different from the general NSCAS population, post-stratification weights were applied to the linking study sample to improve its representativeness. Table 3.3 presents the demographic distributions of the sample after weighting, which are almost identical to the NSCAS student population distributions. The analyses in this study were therefore conducted based on the weighted sample.

Table 3.1. Linking Study Sample Demographics (Unweighted)

Linking Study Sample (Unweighted)							
		%Students by Grade					
Demographic Subgroup		**3**	**4**	**5**	**6**	**7**	**8**
ELA/Reading							
	Total N	15,096	15,228	15,122	14,167	14,771	14,223
Race	Asian	3.0	2.9	3.0	2.9	2.8%	2.8
	Black	7.6	7.6	8.3	7.6	7.7%	8.0
	Hispanic	22.6	23.4	22.4	22.9	23.8%	23.0
	Multi-Race	4.0	3.8	3.4	3.7	3.4%	3.6
	Other	1.1	1.2	1.2	1.3	1.3%	1.3
	White	61.7	61.2	61.6	61.6	61.0%	61.4
Sex	Female	48.4	48.6	48.4	48.4	49.1%	48.6
	Male	51.6	51.4	51.6	51.6	50.9%	51.4
Achievement Level	*Developing*	45.6	43.6	52.9	52.4	53.6%	51.4
	On Track	38.5	38.5	32.3	30.5	36.3%	35.0
	CCR Benchmark	15.9	17.9	14.8	17.1	10.1%	13.6
Mathematics							
	Total N	15,062	15,077	15,215	14,288	14,122	13,829
Race*	Asian	3.1	2.9	3.0	2.8	2.8	2.8
	Black	7.7	7.7	8.2	7.6	7.6	7.9
	Hispanic	22.6	23.4	22.6	22.6	23.5	22.7
	Multi-Race	4.1	3.8	3.4	3.7	3.1	3.2
	Other	1.1	1.3	1.1	1.3	1.3	1.2
	White	61.4	60.9	61.7	61.9	61.8	62.2
Sex	Female	48.4	48.7	48.6	48.5	49.1	48.9
	Male	51.6	51.3	51.4	51.5	50.9	51.1
Achievement Level	*Developing*	45.9	49.0	47.4	45.9	52.2	53.5
	On Track	44.8	42.5	42.3	44.6	40.0	36.6
	CCR Benchmark	9.3	8.4	10.3	9.5	7.9	10.0

Table 3.2. Spring 2019 NSCAS Student Population Demographics

Demographic Subgroup		%Students by Grade					
		3	4	5	6	7	8
ELA							
	Total N	23,475	23,982	24,009	22,431	23,562	23,226
Race	Asian	2.9	2.7	2.8	2.7	2.7	2.6
	Black	6.6	6.7	7.0	6.7	6.9	6.9
	Hispanic	19.5	19.9	19.4	19.3	19.4	19.0
	Multi-Race	4.4	4.4	4.2	4.1	3.8	3.7
	Other	1.4	1.4	1.4	1.6	1.5	1.4
	White	65.2	64.8	65.1	65.7	65.8	66.4
Sex	Female	48.4	48.8	48.5	48.3	48.8	48.5
	Male	51.6	51.2	51.5	51.7	51.2	51.5
Achievement Level	*Developing*	43.6	41.7	51.9	50.7	51.1	49.5
	On Track	39.0	39.5	32.9	31.6	38.1	36.0
	CCR Benchmark	17.4	18.8	15.3	17.7	10.8	14.5
Mathematics							
	Total N	23,446	23,967	23,998	22,414	23,547	23,217
Race*	Asian	2.9	2.7	2.8	2.7	2.7	2.6
	Black	6.6	6.6	7.0	6.8	6.9	6.9
	Hispanic	19.5	19.9	19.4	19.3	19.4	19.0
	Multi-Race	4.5	4.4	4.2	4.1	3.8	3.7
	Other	1.4	1.4	1.4	1.6	1.5	1.4
	White	65.2	64.9	65.2	65.7	65.8	66.4
Sex	Female	48.4	48.8	48.5	48.3	48.8	48.5
	Male	51.6	51.2	51.5	51.7	51.2	51.5
Achievement Level	*Developing*	44.9	48.3	45.8	44.8	51.0	52.5
	On Track	45.4	43.6	43.5	45.4	40.3	37.1
	CCR Benchmark	9.7	8.1	10.7	9.8	8.6	10.4

Table 3.3. Linking Study Sample Demographics (Weighted)

Linking Study Sample (Weighted)							
		%Students by Grade					
Demographic Subgroup		**3**	**4**	**5**	**6**	**7**	**8**
ELA/Reading							
	Total N	15,096	15,228	15,137	14,167	14,771	14,223
Race	Asian	2.9	2.7	2.8	2.7	2.7	2.6
	Black	6.6	6.6	7.0	6.7	6.9	6.9
	Hispanic	19.5	19.9	19.4	19.3	19.4	19.0
	Multi-Race	4.4	4.4	4.2	4.1	3.8	3.7
	Other	1.4	1.4	1.4	1.5	1.5	1.4
	White	65.2	64.8	65.1	65.7	65.8	66.4
Sex	Female	48.4	48.8	48.5	48.3	48.8	48.5
	Male	51.6	51.2	51.5	51.7	51.2	51.5
Achievement Level	*Developing*	43.6	41.7	51.8	50.7	51.1	49.5
	On Track	39.0	39.5	32.9	31.6	38.1	36.0
	CCR Benchmark	17.4	18.8	15.3	17.7	10.8	14.5
Mathematics							
	Total N	15,062	15,077	15,215	14,288	14,108	13,829
Race*	Asian	2.9	2.7	2.8	2.7	2.7	2.6
	Black	6.6	6.6	7.0	6.8	6.9	6.9
	Hispanic	19.5	19.9	19.4	19.3	19.4	19.0
	Multi-Race	4.5	4.4	4.2	4.1	3.8	3.7
	Other	1.4	1.4	1.4	1.6	1.5	1.4
	White	65.2	64.9	65.2	65.7	65.8	66.4
Sex	Female	48.4	48.8	48.5	48.3	48.8	48.5
	Male	51.6	51.2	51.5	51.7	51.2	51.5
Achievement Level	*Developing*	44.9	48.3	45.8	44.8	51.1	52.5
	On Track	45.4	43.6	43.5	45.4	40.3	37.1
	CCR Benchmark	9.7	8.1	10.7	9.8	8.6	10.4

3.2. Descriptive Statistics

Table 3.4 presents descriptive statistics of the MAP Growth and NSCAS test scores from Spring 2019, including the correlation coefficient (r) between them. The correlation coefficients between the scores range from 0.84 to 0.85 for ELA/Reading and 0.87 to 0.89 for Mathematics. These values indicate a strong relationship among the scores, which is important validity evidence for the claim that MAP Growth scores are good predictors of performance on the NSCAS assessments.

Table 3.4. Descriptive Statistics of Test Scores

Grade	N	r	NSCAS*				MAP Growth*			
			Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
ELA/Reading										
3	15,096	0.85	2485.8	71.8	2253	2748	200.5	15.4	143	245
4	15,228	0.84	2514.1	72.9	2252	2778	207.6	15.0	143	251
5	15,137	0.84	2525.8	69.6	2282	2833	212.9	15.1	142	256
6	14,167	0.84	2538.3	68.1	2292	2777	216.8	14.8	148	258
7	14,771	0.84	2544.6	72.8	2301	2750	219.1	15.3	144	263
8	14,223	0.84	2557.7	68.9	2311	2853	222.2	15.9	150	275
Mathematics										
3	15,062	0.89	1195.5	71.3	1001	1470	204.7	13.8	127	257
4	15,077	0.87	1225.2	66.4	1012	1500	213.6	15.2	138	270
5	15,215	0.88	1244.4	70.0	1022	1510	222.2	16.9	140	283
6	14,288	0.88	1252.6	68.0	1032	1530	226.6	16.2	136	289
7	14,108	0.87	1252.0	64.2	1042	1540	230.6	18.0	143	294
8	13,829	0.87	1268.1	70.8	1052	1550	235.1	19.2	139	310

*SD = standard deviation. Min. = minimum. Max. = maximum.

3.3. MAP Growth Cut Scores

Table 3.5 and Table 3.6 present the NSCAS scale score ranges and the corresponding MAP Growth RIT cut scores and percentile ranges by content area and grade. These tables can be used to predict a student's likely achievement level on the NSCAS spring assessment when MAP Growth is taken in the fall, winter, or spring. For example, a Grade 3 student who obtained a MAP Growth Reading RIT score of 190 in the fall is likely to reach *On Track* proficiency on the NSCAS ELA test. A Grade 3 student who obtained a MAP Growth Reading RIT score of 200 in the spring is also likely to reach *On Track* proficiency on the NSCAS assessment. The spring cut score is higher than the fall cut score because growth is expected between fall and spring as students receive more instruction during the school year.

Within this report, the cut scores for fall and winter are derived from the spring cuts and the typical growth scores from fall-to-spring or winter-to-spring. The typical growth scores are based on the default instructional weeks most commonly encountered for each term (Weeks 4, 20, and 32 for fall, winter, and spring, respectively). Since instructional weeks often vary by district, the cut scores in this report may differ slightly from the MAP Growth score reports that reflect instructional weeks set by partners. If the actual instructional weeks deviate from the default ones, a student's projected achievement level could be different from the generic projection presented in this document. Partners are therefore encouraged to use the projected achievement level in students' profile, classroom, and grade reports in the NWEA reporting system since they reflect the specific instructional weeks set by partners.

Table 3.5. MAP Growth Cut Scores—ELA/Reading

Grade	NSCAS ELA* Developing		NSCAS ELA* On Track		NSCAS ELA* CCR Benchmark	
3	2220–2476		**2477**–2556		2557–2840	
4	2250–2499		**2500**–2581		2582–2850	
5	2280–2530		**2531**–2598		2599–2860	
6	2290–2542		**2543**–2602		2603–2870	
7	2300–2555		**2556**–2629		2630–2880	
8	2310–2560		**2561**–2631		2632–2890	

	MAP Growth Reading* Developing		On Track		CCR Benchmark	
Grade	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall						
2	100–175	1–58	**176**–195	59–93	196–350	94–99
3	100–189	1–57	**190**–206	58–88	207–350	89–99
4	100–197	1–52	**198**–214	53–85	215–350	86–99
5	100–208	1–60	**209**–223	61–87	224–350	88–99
6	100–213	1–58	**214**–226	59–84	227–350	85–99
7	100–217	1–58	**218**–233	59–87	234–350	88–99
8	100–220	1–56	**221**–235	57–84	236–350	85–99
Winter						
2	100–184	1–59	**185**–202	60–92	203–350	93–99
3	100–196	1–57	**197**–212	58–87	213–350	88–99
4	100–203	1–53	**204**–218	54–84	219–350	85–99
5	100–212	1–59	**213**–226	60–86	227–350	87–99
6	100–217	1–59	**218**–228	60–82	229–350	83–99
7	100–220	1–59	**221**–234	60–86	235–350	87–99
8	100–222	1–55	**223**–236	56–83	237–350	84–99
Spring						
2	100–188	1–58	**189**–206	59–91	207–350	92–99
3	100–199	1–56	**200**–214	57–85	215–350	86–99
4	100–205	1–52	**206**–220	53–83	221–350	84–99
5	100–214	1–59	**215**–227	60–85	228–350	86–99
6	100–218	1–58	**219**–229	59–81	230–350	82–99
7	100–221	1–58	**222**–235	59–85	236–350	86–99
8	100–223	1–55	**224**–237	56–82	238–350	83–99

*Cut scores for fall and winter are derived from the spring cuts and growth norms based on the typical instructional weeks. Spring cut scores for Grade 2 were derived from the Grade 3 cuts using the growth norms. Bolded numbers indicate the cut scores considered to be at least proficient for accountability purposes.

Table 3.6. MAP Growth Cut Scores—Mathematics

NSCAS Mathematics*			
Grade	*Developing*	*On Track*	*CCR Benchmark*
3	1000–1189	**1190**–1285	1286–1470
4	1010–1221	**1222**–1316	1317–1500
5	1020–1235	**1236**–1330	1331–1510
6	1030–1243	**1244**–1341	1342–1530
7	1040–1246	**1247**–1345	1346–1540
8	1050–1263	**1264**–1364	1365–1550

MAP Growth Mathematics*						
	Developing		*On Track*		*CCR Benchmark*	
Grade	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall						
2	100–178	1–61	**179**–198	62-96	199–350	97–99
3	100–191	1–59	**192**–209	60–94	210–350	95–99
4	100–202	1–58	**203**–221	59–93	222–350	94–99
5	100–211	1–56	**212**–231	57–92	232–350	93–99
6	100–217	1–57	**218**–237	58–92	238–350	93–99
7	100–224	1–60	**225**–247	61–93	248–350	94–99
8	100–231	1–64	**232**–254	65–93	255–350	94–99
Winter						
2	100–187	1–61	**188**–205	62–94	206–350	95–99
3	100–198	1–57	**199**–216	58–93	217–350	94–99
4	100–209	1–59	**210**–228	60–93	229–350	94–99
5	100–217	1–57	**218**–237	58–92	238–350	93–99
6	100–222	1–57	**223**–242	58–91	243–350	92–99
7	100–228	1–60	**229**–251	61–93	252–350	94–99
8	100–234	1–63	**235**–257	64–93	258–350	94–99
Spring						
2	100–192	1–60	**193**–210	61–94	211–350	95–99
3	100–203	1–57	**204**–220	58–91	221–350	92–99
4	100–213	1–58	**214**–232	59–92	233–350	93–99
5	100–221	1–57	**222**–241	58–91	242–350	92–99
6	100–225	1–56	**226**–245	57–90	246–350	91–99
7	100–231	1–60	**232**–254	61–93	255–350	94–99
8	100–236	1–62	**237**–259	63–92	260–350	93–99

*Cut scores for fall and winter are derived from the spring cuts and growth norms based on the typical instructional weeks. Spring cut scores for Grade 2 were derived from the Grade 3 cuts using the growth norms. Bolded numbers indicate the cut scores considered to be at least proficient for accountability purposes.

3.4. Classification Accuracy

Table 3.7 presents the classification accuracy summary statistics, including the overall classification accuracy rate. These results indicate how well MAP Growth spring RIT scores predict proficiency on the NSCAS tests, providing insight into the predictive validity of MAP Growth. The overall classification accuracy rate ranges from 0.81 to 0.86 for ELA/Reading and 0.82 to 0.88 for Mathematics. These values suggest that the RIT cut scores are good at classifying students as proficient or not proficient on the NSCAS assessment. For Grade 2, the classification accuracy rate refers to how well the MAP Growth cuts can predict students' proficiency status on NSCAS in Grade 3.

Although the results show that MAP Growth scores can be used to accurately classify students as likely to be proficient on the NSCAS tests, there is a notable limitation to how these results should be used and interpreted. NSCAS and MAP Growth assessments are designed for different purposes and measure slightly different constructs even within the same content area. Therefore, scores on the two tests cannot be assumed to be interchangeable. MAP Growth may not be used as a substitute for the state tests and vice versa.

Table 3.7. Classification Accuracy Results

Grade	N	Cut Score		Class. Accuracy*	Rate*		Sensitivity	Specificity	Precision	AUC*
		MAP Growth	NSCAS		FP	FN				
ELA/Reading										
2	12,756	189	2477	0.81	0.24	0.16	0.84	0.76	0.81	0.89
3	15,096	200	2477	0.85	0.19	0.12	0.88	0.81	0.86	0.93
4	15,228	206	2500	0.86	0.21	0.10	0.90	0.79	0.86	0.93
5	15,137	215	2531	0.84	0.18	0.13	0.87	0.82	0.82	0.93
6	14,167	219	2543	0.85	0.17	0.14	0.86	0.83	0.83	0.93
7	14,771	222	2556	0.84	0.15	0.16	0.84	0.85	0.84	0.93
8	14,223	224	2561	0.85	0.17	0.14	0.86	0.83	0.84	0.93
Mathematics										
2	12,859	193	1190	0.82	0.15	0.21	0.79	0.85	0.86	0.90
3	15,062	204	1190	0.86	0.19	0.09	0.91	0.81	0.85	0.94
4	15,077	214	1222	0.85	0.18	0.11	0.89	0.82	0.84	0.93
5	15,215	222	1236	0.87	0.15	0.11	0.89	0.85	0.87	0.95
6	14,288	226	1244	0.87	0.18	0.09	0.91	0.82	0.86	0.95
7	14,108	232	1247	0.86	0.16	0.12	0.88	0.84	0.84	0.94
8	13,829	237	1264	0.88	0.14	0.11	0.89	0.86	0.85	0.95

*Class. Accuracy = overall classification accuracy rate. FP = false positives. FN = false negatives. AUC = area under the ROC curve.

3.5. Proficiency Projection

Table 3.8 and Table 3.9 present the estimated probability of achieving *On Track* performance on the NSCAS test based on RIT scores from fall, winter, or spring. "Prob." indicates the probability of obtaining proficient status on the NSCAS test in the spring. For example, a Grade 3 student who obtained a MAP Growth Reading score of 204 in the fall has a 95% chance of reaching *On Track* proficiency or higher on the NSCAS test.

Table 3.8. Proficiency Projection based on RIT Scores—ELA/Reading

ELA/Reading											
			Fall			**Winter**			**Spring**		
			Fall RIT	**Projected Proficiency**		**Winter RIT**	**Projected Proficiency**		**Spring RIT**	**Projected Proficiency**	
Grade	**Start %ile**	**Spring Cut**		*On Track*	**Prob.**		*On Track*	**Prob.**		*On Track*	**Prob.**
	5	189	147	No	<0.01	156	No	<0.01	160	No	<0.01
	10	189	153	No	<0.01	162	No	<0.01	166	No	<0.01
	15	189	157	No	0.01	166	No	<0.01	170	No	<0.01
	20	189	160	No	0.03	169	No	<0.01	173	No	<0.01
	25	189	162	No	0.04	171	No	0.01	175	No	<0.01
	30	189	164	No	0.07	173	No	0.02	177	No	<0.01
	35	189	166	No	0.12	175	No	0.05	180	No	<0.01
	40	189	168	No	0.18	177	No	0.10	182	No	0.01
	45	189	170	No	0.21	179	No	0.13	184	No	0.06
2	50	189	172	No	0.30	181	No	0.23	186	No	0.17
	55	189	174	No	0.40	183	No	0.35	188	No	0.38
	60	189	176	Yes	0.50	185	Yes	0.50	189	Yes	0.50
	65	189	178	Yes	0.60	187	Yes	0.65	192	Yes	0.83
	70	189	180	Yes	0.65	189	Yes	0.77	194	Yes	0.94
	75	189	183	Yes	0.79	191	Yes	0.87	196	Yes	0.99
	80	189	185	Yes	0.85	194	Yes	0.95	199	Yes	>0.99
	85	189	188	Yes	0.91	197	Yes	0.99	202	Yes	>0.99
	90	189	192	Yes	0.97	200	Yes	>0.99	205	Yes	>0.99
	95	189	197	Yes	0.99	206	Yes	>0.99	211	Yes	>0.99

			ELA/Reading								
			Fall			**Winter**			**Spring**		
				Projected Proficiency			**Projected Proficiency**			**Projected Proficiency**	
Grade	**Start %ile**	**Spring Cut**	**Fall RIT**	*On Track*	**Prob.**	**Winter RIT**	*On Track*	**Prob.**	**Spring RIT**	*On Track*	**Prob.**
	5	200	159	No	<0.01	167	No	<0.01	170	No	<0.01
	10	200	165	No	<0.01	173	No	<0.01	176	No	<0.01
	15	200	169	No	0.01	177	No	<0.01	180	No	<0.01
	20	200	173	No	0.02	180	No	<0.01	183	No	<0.01
	25	200	175	No	0.04	183	No	0.01	186	No	<0.01
	30	200	178	No	0.09	185	No	0.02	189	No	<0.01
	35	200	180	No	0.11	188	No	0.07	191	No	<0.01
	40	200	182	No	0.17	190	No	0.09	193	No	0.01
	45	200	185	No	0.30	192	No	0.17	195	No	0.06
3	50	200	187	No	0.34	194	No	0.29	197	No	0.17
	55	200	189	No	0.45	196	No	0.43	199	No	0.38
	60	200	191	Yes	0.55	198	Yes	0.57	201	Yes	0.62
	65	200	193	Yes	0.66	200	Yes	0.71	203	Yes	0.83
	70	200	195	Yes	0.70	202	Yes	0.83	206	Yes	0.97
	75	200	198	Yes	0.83	205	Yes	0.93	208	Yes	0.99
	80	200	201	Yes	0.91	207	Yes	0.97	211	Yes	>0.99
	85	200	204	Yes	0.95	211	Yes	0.99	214	Yes	>0.99
	90	200	208	Yes	0.98	215	Yes	>0.99	218	Yes	>0.99
	95	200	214	Yes	>0.99	220	Yes	>0.99	224	Yes	>0.99
	5	206	169	No	<0.01	176	No	<0.01	178	No	<0.01
	10	206	175	No	<0.01	182	No	<0.01	184	No	<0.01
	15	206	179	No	0.01	186	No	<0.01	188	No	<0.01
	20	206	183	No	0.04	189	No	<0.01	191	No	<0.01
	25	206	185	No	0.06	192	No	0.02	194	No	<0.01
	30	206	188	No	0.11	194	No	0.04	196	No	<0.01
	35	206	190	No	0.17	196	No	0.09	199	No	0.01
	40	206	192	No	0.24	198	No	0.17	201	No	0.06
	45	206	195	No	0.34	200	No	0.22	203	No	0.17
4	50	206	197	No	0.44	202	No	0.35	205	No	0.38
	55	206	199	Yes	0.56	205	Yes	0.58	207	Yes	0.62
	60	206	201	Yes	0.66	207	Yes	0.72	209	Yes	0.83
	65	206	203	Yes	0.71	209	Yes	0.83	211	Yes	0.94
	70	206	205	Yes	0.80	211	Yes	0.91	213	Yes	0.99
	75	206	208	Yes	0.89	213	Yes	0.96	216	Yes	>0.99
	80	206	211	Yes	0.94	216	Yes	0.99	219	Yes	>0.99
	85	206	214	Yes	0.97	219	Yes	>0.99	222	Yes	>0.99
	90	206	218	Yes	0.99	223	Yes	>0.99	226	Yes	>0.99
	95	206	224	Yes	>0.99	229	Yes	>0.99	232	Yes	>0.99

			Fall			Winter			Spring		
				Projected Proficiency			**Projected Proficiency**			**Projected Proficiency**	
Grade	**Start %ile**	**Spring Cut**	**Fall RIT**	*On Track*	**Prob.**	**Winter RIT**	*On Track*	**Prob.**	**Spring RIT**	*On Track*	**Prob.**
	5	215	178	No	<0.01	183	No	<0.01	185	No	<0.01
	10	215	183	No	<0.01	189	No	<0.01	191	No	<0.01
	15	215	187	No	<0.01	193	No	<0.01	194	No	<0.01
	20	215	191	No	0.01	196	No	<0.01	198	No	<0.01
	25	215	193	No	0.03	198	No	<0.01	200	No	<0.01
	30	215	196	No	0.06	201	No	0.01	203	No	<0.01
	35	215	198	No	0.08	203	No	0.03	205	No	<0.01
	40	215	200	No	0.13	205	No	0.06	207	No	0.01
	45	215	202	No	0.20	207	No	0.13	209	No	0.03
5	50	215	204	No	0.29	209	No	0.22	211	No	0.11
	55	215	207	No	0.39	211	No	0.35	213	No	0.27
	60	215	209	Yes	0.50	213	Yes	0.50	215	Yes	0.50
	65	215	211	Yes	0.61	215	Yes	0.65	217	Yes	0.73
	70	215	213	Yes	0.66	217	Yes	0.72	219	Yes	0.89
	75	215	216	Yes	0.80	220	Yes	0.87	222	Yes	0.99
	80	215	218	Yes	0.87	222	Yes	0.94	224	Yes	>0.99
	85	215	221	Yes	0.92	226	Yes	0.99	228	Yes	>0.99
	90	215	225	Yes	0.97	229	Yes	>0.99	231	Yes	>0.99
	95	215	231	Yes	>0.99	235	Yes	>0.99	237	Yes	>0.99
	5	219	183	No	<0.01	188	No	<0.01	189	No	<0.01
	10	219	189	No	<0.01	193	No	<0.01	195	No	<0.01
	15	219	193	No	<0.01	197	No	<0.01	199	No	<0.01
	20	219	196	No	0.01	200	No	<0.01	202	No	<0.01
	25	219	199	No	0.03	203	No	<0.01	205	No	<0.01
	30	219	202	No	0.06	205	No	0.01	207	No	<0.01
	35	219	204	No	0.10	208	No	0.04	209	No	<0.01
	40	219	206	No	0.16	210	No	0.09	211	No	0.01
	45	219	208	No	0.19	212	No	0.17	213	No	0.03
6	50	219	210	No	0.28	214	No	0.28	215	No	0.11
	55	219	212	No	0.39	216	No	0.35	217	No	0.27
	60	219	214	Yes	0.50	218	Yes	0.50	219	Yes	0.50
	65	219	217	Yes	0.61	220	Yes	0.65	222	Yes	0.83
	70	219	219	Yes	0.72	222	Yes	0.78	224	Yes	0.94
	75	219	221	Yes	0.81	225	Yes	0.91	226	Yes	0.99
	80	219	224	Yes	0.87	227	Yes	0.96	229	Yes	>0.99
	85	219	227	Yes	0.94	230	Yes	0.99	232	Yes	>0.99
	90	219	231	Yes	0.98	234	Yes	>0.99	236	Yes	>0.99
	95	219	237	Yes	>0.99	240	Yes	>0.99	242	Yes	>0.99

ELA/Reading

			Fall			Winter			Spring		
ELA/Reading											
Grade	Start %ile	Spring Cut	Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				On Track	Prob.		*On Track*	Prob.		*On Track*	Prob.
7	5	222	187	No	<0.01	190	No	<0.01	191	No	<0.01
	10	222	193	No	<0.01	196	No	<0.01	197	No	<0.01
	15	222	197	No	<0.01	200	No	<0.01	201	No	<0.01
	20	222	200	No	0.01	203	No	<0.01	205	No	<0.01
	25	222	203	No	0.02	206	No	<0.01	207	No	<0.01
	30	222	206	No	0.06	209	No	0.02	210	No	<0.01
	35	222	208	No	0.10	211	No	0.04	212	No	<0.01
	40	222	210	No	0.16	213	No	0.06	214	No	0.01
	45	222	212	No	0.19	215	No	0.12	216	No	0.03
	50	222	214	No	0.28	217	No	0.22	218	No	0.11
	55	222	216	No	0.39	219	No	0.35	220	No	0.27
	60	222	218	Yes	0.50	221	Yes	0.50	223	Yes	0.62
	65	222	221	Yes	0.61	223	Yes	0.65	225	Yes	0.83
	70	222	223	Yes	0.72	226	Yes	0.83	227	Yes	0.94
	75	222	225	Yes	0.81	228	Yes	0.91	229	Yes	0.99
	80	222	228	Yes	0.90	231	Yes	0.97	232	Yes	>0.99
	85	222	231	Yes	0.94	234	Yes	0.99	235	Yes	>0.99
	90	222	235	Yes	0.98	238	Yes	>0.99	239	Yes	>0.99
	95	222	241	Yes	>0.99	244	Yes	>0.99	245	Yes	>0.99
8	5	224	190	No	<0.01	193	No	<0.01	194	No	<0.01
	10	224	196	No	<0.01	199	No	<0.01	200	No	<0.01
	15	224	200	No	0.01	203	No	<0.01	204	No	<0.01
	20	224	204	No	0.02	206	No	<0.01	207	No	<0.01
	25	224	207	No	0.05	209	No	0.01	210	No	<0.01
	30	224	209	No	0.08	212	No	0.02	213	No	<0.01
	35	224	211	No	0.11	214	No	0.04	215	No	<0.01
	40	224	214	No	0.20	216	No	0.09	217	No	0.01
	45	224	216	No	0.29	218	No	0.17	220	No	0.11
	50	224	218	No	0.39	221	No	0.35	222	No	0.27
	55	224	220	No	0.45	223	Yes	0.50	224	Yes	0.50
	60	224	222	Yes	0.55	225	Yes	0.65	226	Yes	0.73
	65	224	225	Yes	0.71	227	Yes	0.78	228	Yes	0.89
	70	224	227	Yes	0.80	229	Yes	0.87	231	Yes	0.99
	75	224	230	Yes	0.87	232	Yes	0.96	233	Yes	>0.99
	80	224	232	Yes	0.92	235	Yes	0.99	236	Yes	>0.99
	85	224	236	Yes	0.97	238	Yes	>0.99	239	Yes	>0.99
	90	224	240	Yes	0.99	242	Yes	>0.99	243	Yes	>0.99
	95	224	246	Yes	>0.99	248	Yes	>0.99	249	Yes	>0.99

Table 3.9. Proficiency Projection based on RIT Scores—Mathematics

Grade	Start %ile	Spring Cut	Fall RIT	Fall Projected Proficiency On Track	Fall Projected Proficiency Prob.	Winter RIT	Winter Projected Proficiency On Track	Winter Projected Proficiency Prob.	Spring RIT	Spring Projected Proficiency On Track	Spring Projected Proficiency Prob.
2	5	193	154	No	<0.01	163	No	<0.01	167	No	<0.01
	10	193	158	No	<0.01	167	No	<0.01	172	No	<0.01
	15	193	162	No	0.01	171	No	<0.01	175	No	<0.01
	20	193	164	No	0.01	173	No	<0.01	178	No	<0.01
	25	193	166	No	0.03	175	No	0.01	180	No	<0.01
	30	193	168	No	0.06	177	No	0.02	182	No	<0.01
	35	193	170	No	0.11	179	No	0.05	184	No	<0.01
	40	193	172	No	0.18	181	No	0.07	186	No	0.01
	45	193	173	No	0.22	182	No	0.10	188	No	0.04
	50	193	175	No	0.27	184	No	0.20	189	No	0.08
	55	193	177	No	0.38	186	No	0.34	191	No	0.25
	60	193	178	No	0.44	187	No	0.42	193	Yes	0.50
	65	193	180	Yes	0.56	189	Yes	0.58	195	Yes	0.75
	70	193	182	Yes	0.68	191	Yes	0.74	196	Yes	0.85
	75	193	184	Yes	0.78	193	Yes	0.85	198	Yes	0.96
	80	193	186	Yes	0.82	195	Yes	0.93	201	Yes	>0.99
	85	193	188	Yes	0.89	198	Yes	0.98	203	Yes	>0.99
	90	193	192	Yes	0.97	201	Yes	>0.99	207	Yes	>0.99
	95	193	196	Yes	0.99	205	Yes	>0.99	212	Yes	>0.99
3	5	204	166	No	<0.01	174	No	<0.01	178	No	<0.01
	10	204	171	No	<0.01	179	No	<0.01	183	No	<0.01
	15	204	175	No	<0.01	182	No	<0.01	186	No	<0.01
	20	204	177	No	0.01	185	No	<0.01	189	No	<0.01
	25	204	179	No	0.03	187	No	0.01	192	No	<0.01
	30	204	181	No	0.05	189	No	0.02	194	No	<0.01
	35	204	183	No	0.10	191	No	0.04	196	No	<0.01
	40	204	185	No	0.17	193	No	0.10	198	No	0.02
	45	204	187	No	0.26	195	No	0.20	199	No	0.04
	50	204	188	No	0.31	196	No	0.26	201	No	0.15
	55	204	190	No	0.44	198	No	0.42	203	No	0.37
	60	204	192	Yes	0.50	200	Yes	0.58	205	Yes	0.63
	65	204	194	Yes	0.63	201	Yes	0.67	207	Yes	0.85
	70	204	196	Yes	0.74	203	Yes	0.80	208	Yes	0.92
	75	204	198	Yes	0.83	205	Yes	0.90	211	Yes	0.99
	80	204	200	Yes	0.90	208	Yes	0.97	213	Yes	>0.99
	85	204	202	Yes	0.95	210	Yes	0.99	216	Yes	>0.99
	90	204	206	Yes	0.99	214	Yes	>0.99	219	Yes	>0.99
	95	204	211	Yes	>0.99	219	Yes	>0.99	224	Yes	>0.99

			Fall			Winter			Spring		
				Projected Proficiency			**Projected Proficiency**			**Projected Proficiency**	
Grade	**Start %ile**	**Spring Cut**	**Fall RIT**	*On Track*	**Prob.**	**Winter RIT**	*On Track*	**Prob.**	**Spring RIT**	*On Track*	**Prob.**
	5	214	176	No	<0.01	182	No	<0.01	185	No	<0.01
	10	214	181	No	<0.01	187	No	<0.01	191	No	<0.01
	15	214	185	No	<0.01	191	No	<0.01	194	No	<0.01
	20	214	187	No	0.01	194	No	<0.01	197	No	<0.01
	25	214	190	No	0.02	196	No	<0.01	200	No	<0.01
	30	214	192	No	0.04	198	No	0.01	202	No	<0.01
	35	214	194	No	0.07	200	No	0.02	205	No	<0.01
	40	214	196	No	0.13	202	No	0.04	207	No	0.01
	45	214	198	No	0.21	204	No	0.10	209	No	0.04
4	50	214	200	No	0.32	206	No	0.20	211	No	0.15
	55	214	201	No	0.37	208	No	0.33	212	No	0.25
	60	214	203	Yes	0.50	210	Yes	0.50	214	Yes	0.50
	65	214	205	Yes	0.63	212	Yes	0.67	217	Yes	0.85
	70	214	207	Yes	0.74	214	Yes	0.80	219	Yes	0.96
	75	214	209	Yes	0.83	216	Yes	0.90	221	Yes	0.99
	80	214	212	Yes	0.93	219	Yes	0.97	224	Yes	>0.99
	85	214	214	Yes	0.96	221	Yes	0.99	227	Yes	>0.99
	90	214	218	Yes	0.99	225	Yes	>0.99	230	Yes	>0.99
	95	214	223	Yes	>0.99	231	Yes	>0.99	236	Yes	>0.99
	5	222	184	No	<0.01	189	No	<0.01	191	No	<0.01
	10	222	190	No	<0.01	194	No	<0.01	197	No	<0.01
	15	222	193	No	<0.01	198	No	<0.01	201	No	<0.01
	20	222	196	No	<0.01	201	No	<0.01	205	No	<0.01
	25	222	199	No	0.02	204	No	<0.01	207	No	<0.01
	30	222	201	No	0.05	206	No	0.01	210	No	<0.01
	35	222	203	No	0.08	209	No	0.03	212	No	<0.01
	40	222	205	No	0.14	211	No	0.07	215	No	0.01
	45	222	207	No	0.22	213	No	0.15	217	No	0.04
5	50	222	209	No	0.32	215	No	0.26	219	No	0.15
	55	222	211	No	0.44	217	No	0.42	221	No	0.37
	60	222	213	Yes	0.56	219	Yes	0.58	223	Yes	0.63
	65	222	215	Yes	0.68	221	Yes	0.74	225	Yes	0.85
	70	222	217	Yes	0.78	223	Yes	0.85	228	Yes	0.98
	75	222	219	Yes	0.86	225	Yes	0.93	230	Yes	>0.99
	80	222	222	Yes	0.94	228	Yes	0.98	233	Yes	>0.99
	85	222	225	Yes	0.98	231	Yes	>0.99	236	Yes	>0.99
	90	222	229	Yes	>0.99	235	Yes	>0.99	240	Yes	>0.99
	95	222	234	Yes	>0.99	241	Yes	>0.99	246	Yes	>0.99

Mathematics

				Mathematics								
				Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
Grade	Start %ile	Spring Cut		On Track	Prob.		On Track	Prob.		On Track	Prob.
	5	226	188	No	<0.01	192	No	<0.01	194	No	<0.01
	10	226	194	No	<0.01	198	No	<0.01	200	No	<0.01
	15	226	198	No	<0.01	202	No	<0.01	205	No	<0.01
	20	226	201	No	<0.01	205	No	<0.01	208	No	<0.01
	25	226	204	No	0.01	208	No	<0.01	211	No	<0.01
	30	226	206	No	0.03	211	No	0.01	214	No	<0.01
	35	226	209	No	0.08	213	No	0.02	216	No	<0.01
	40	226	211	No	0.14	215	No	0.04	218	No	<0.01
	45	226	213	No	0.22	217	No	0.10	221	No	0.04
6	50	226	215	No	0.32	220	No	0.26	223	No	0.15
	55	226	217	No	0.44	222	No	0.42	225	No	0.37
	60	226	219	Yes	0.56	224	Yes	0.58	227	Yes	0.63
	65	226	221	Yes	0.68	226	Yes	0.74	230	Yes	0.92
	70	226	223	Yes	0.78	228	Yes	0.86	232	Yes	0.98
	75	226	226	Yes	0.90	231	Yes	0.96	235	Yes	>0.99
	80	226	228	Yes	0.94	234	Yes	0.99	238	Yes	>0.99
	85	226	231	Yes	0.98	237	Yes	>0.99	241	Yes	>0.99
	90	226	235	Yes	>0.99	241	Yes	>0.99	245	Yes	>0.99
	95	226	241	Yes	>0.99	247	Yes	>0.99	252	Yes	>0.99
	5	232	192	No	<0.01	194	No	<0.01	196	No	<0.01
	10	232	198	No	<0.01	201	No	<0.01	203	No	<0.01
	15	232	202	No	<0.01	205	No	<0.01	207	No	<0.01
	20	232	206	No	<0.01	209	No	<0.01	211	No	<0.01
	25	232	208	No	<0.01	212	No	<0.01	214	No	<0.01
	30	232	211	No	0.01	215	No	<0.01	217	No	<0.01
	35	232	213	No	0.02	217	No	<0.01	220	No	<0.01
	40	232	216	No	0.05	219	No	0.02	222	No	<0.01
	45	232	218	No	0.13	222	No	0.07	224	No	<0.01
7	50	232	220	No	0.21	224	No	0.14	227	No	0.04
	55	232	222	No	0.31	226	No	0.26	229	No	0.15
	60	232	225	Yes	0.50	229	Yes	0.50	231	No	0.37
	65	232	227	Yes	0.63	231	Yes	0.67	234	Yes	0.75
	70	232	229	Yes	0.74	233	Yes	0.80	236	Yes	0.92
	75	232	232	Yes	0.87	236	Yes	0.93	239	Yes	0.99
	80	232	235	Yes	0.95	239	Yes	0.98	242	Yes	>0.99
	85	232	238	Yes	0.98	243	Yes	>0.99	246	Yes	>0.99
	90	232	243	Yes	>0.99	247	Yes	>0.99	251	Yes	>0.99
	95	232	249	Yes	>0.99	254	Yes	>0.99	257	Yes	>0.99

			Mathematics								
			Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
Grade	Start %ile	Spring Cut		On Track	Prob.		On Track	Prob.		On Track	Prob.
	5	237	194	No	<0.01	196	No	<0.01	197	No	<0.01
	10	237	201	No	<0.01	203	No	<0.01	205	No	<0.01
	15	237	205	No	<0.01	208	No	<0.01	210	No	<0.01
	20	237	209	No	<0.01	212	No	<0.01	214	No	<0.01
	25	237	212	No	<0.01	215	No	<0.01	217	No	<0.01
	30	237	215	No	0.01	218	No	<0.01	220	No	<0.01
	35	237	218	No	0.02	221	No	<0.01	223	No	<0.01
	40	237	220	No	0.04	223	No	0.01	225	No	<0.01
	45	237	223	No	0.10	226	No	0.03	228	No	<0.01
8	50	237	225	No	0.16	228	No	0.07	230	No	0.01
	55	237	227	No	0.24	231	No	0.20	233	No	0.08
	60	237	230	No	0.39	233	No	0.34	235	No	0.25
	65	237	232	Yes	0.50	236	Yes	0.58	238	Yes	0.63
	70	237	235	Yes	0.67	238	Yes	0.73	241	Yes	0.92
	75	237	238	Yes	0.81	241	Yes	0.89	244	Yes	0.99
	80	237	241	Yes	0.90	244	Yes	0.97	247	Yes	>0.99
	85	237	245	Yes	0.97	248	Yes	>0.99	251	Yes	>0.99
	90	237	249	Yes	0.99	253	Yes	>0.99	256	Yes	>0.99
	95	237	256	Yes	>0.99	260	Yes	>0.99	263	Yes	>0.99

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